

UNITED STATES DEPARTMENT OF COMMERCE

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WEATHER BUREAU

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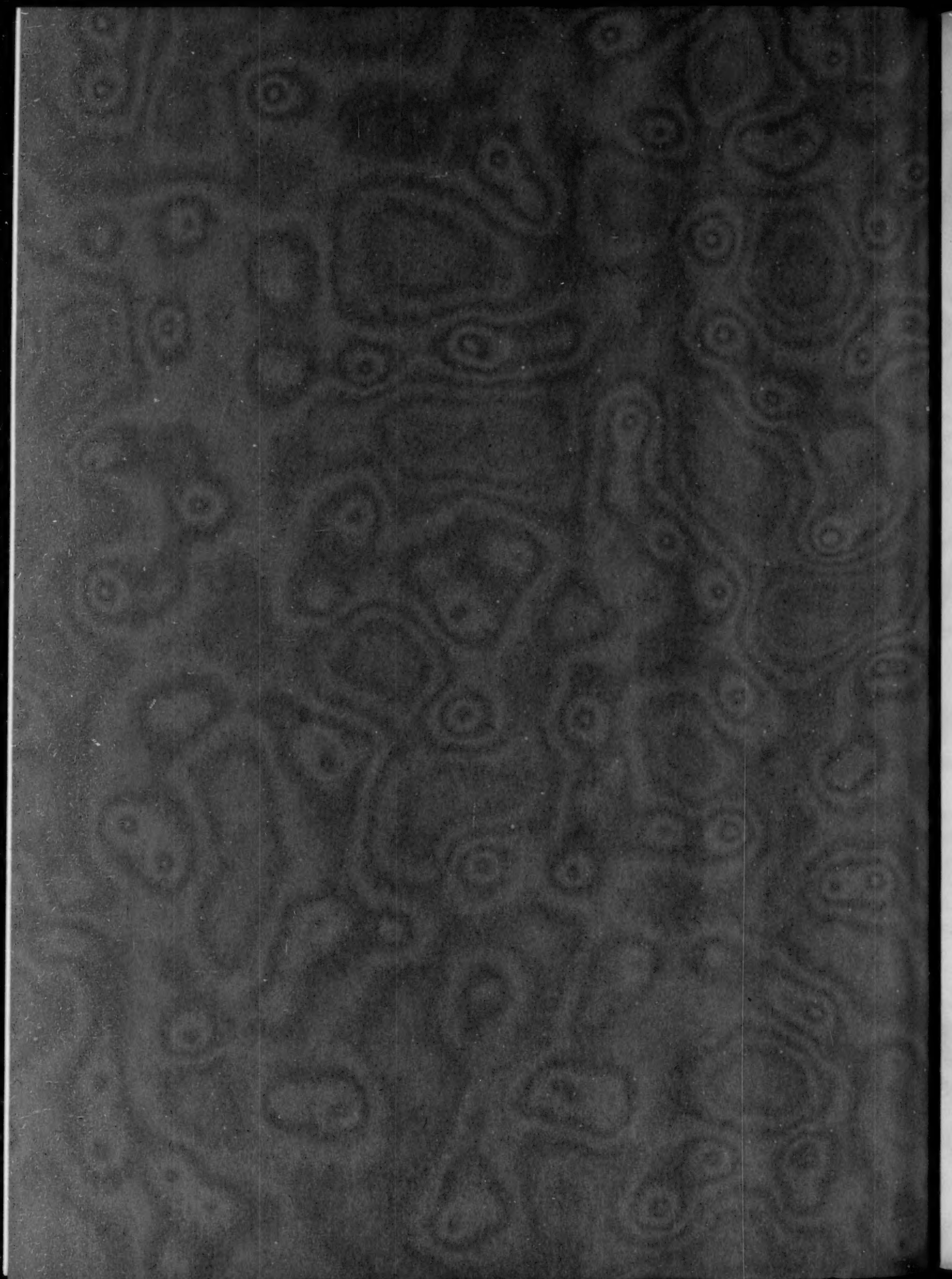
MONTHLY WEATHER REVIEW

OCTOBER 1943

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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR OCTOBER 1943

[Climate and Crop Weather Division, J. B. KINCE, in charge]

AEROLOGICAL OBSERVATIONS

NOTICE.—Effective with the December 1942 issue, the publication of table 1 (RAOB summaries) was discontinued indefinitely.—EDITOR.

TABLE 2.—Free-air resultant winds based on pilot-balloon observations made near 5 p. m. (75th meridian time) during October 1943. Directions given in degrees from North (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second

Altitude (meters) m. s. l.	Abilene, Tex. (538 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (870 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (132 m.)			Charleston, S. C. (17 m.)			Cincinnati, Ohio (152 m.)			Denver, Colo. (1,627 m.)			El Paso, Tex. (1,196 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface.....	30	307	1.7	31	239	2.1	30	310	1.3	31	336	2.4	31	202	2.6	29	287	0.7	30	83	2.9	29	301	1.6	30	303	1.4	31	297	0.7	30	316	1.5	31	8	0.8	31	205	1.4
500.....	30	217	2.5	31	239	2.1	30	303	1.7	31	336	2.4	31	202	2.6	29	287	0.7	30	83	2.9	29	301	1.6	30	303	1.4	31	297	0.7	30	316	1.5	31	8	0.8	31	205	1.4
1,000.....	30	217	2.5	31	239	2.1	30	303	1.7	31	336	2.4	31	202	2.6	29	287	0.7	30	83	2.9	29	301	1.6	30	303	1.4	31	297	0.7	30	316	1.5	31	8	0.8	31	205	1.4
1,500.....	29	246	2.4	31	239	2.1	30	297	2.1	31	291	2.2	30	285	2.3	29	285	2.3	30	285	2.3	29	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3
2,000.....	29	246	2.4	31	239	2.1	30	297	2.1	31	291	2.2	30	285	2.3	29	285	2.3	30	285	2.3	29	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3
2,500.....	29	246	2.4	31	239	2.1	30	297	2.1	31	291	2.2	30	285	2.3	29	285	2.3	30	285	2.3	29	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3
3,000.....	29	246	2.4	31	239	2.1	30	297	2.1	31	291	2.2	30	285	2.3	29	285	2.3	30	285	2.3	29	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3
4,000.....	29	246	2.4	31	239	2.1	30	297	2.1	31	291	2.2	30	285	2.3	29	285	2.3	30	285	2.3	29	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3
5,000.....	29	246	2.4	31	239	2.1	30	297	2.1	31	291	2.2	30	285	2.3	29	285	2.3	30	285	2.3	29	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3
6,000.....	29	246	2.4	31	239	2.1	30	297	2.1	31	291	2.2	30	285	2.3	29	285	2.3	30	285	2.3	29	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3
8,000.....	29	246	2.4	31	239	2.1	30	297	2.1	31	291	2.2	30	285	2.3	29	285	2.3	30	285	2.3	29	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3
10,000.....	29	246	2.4	31	239	2.1	30	297	2.1	31	291	2.2	30	285	2.3	29	285	2.3	30	285	2.3	29	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3
12,000.....	29	246	2.4	31	239	2.1	30	297	2.1	31	291	2.2	30	285	2.3	29	285	2.3	30	285	2.3	29	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3	31	285	2.3	30	285	2.3

TABLE 3.—Maximum free-air wind velocities (m. p. s.), for different sections of the United States, based on pilot-balloon observations during October 1943

Section	Surface to 2,500 meters (m. s. l.)				Between 2,500 and 5,000 meters (m. s. l.)				Above 5,000 meters (m. s. l.)						
	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station
Northeast ¹	46.9	w.	1,020	29	Portland, Maine.....	43.8	wnw.	5,000	7	Caribou, Maine.....	71.2	sw.	11,200	3	Mt. Washington, N. H.
East-Central ²	33.9	nw.	2,160	19	Greensboro, N. C.....	38.3	nw.	4,150	20	Washington, D. C.....	60.8	sw.	11,010	4	Raleigh, N. C.
Southeast ³	27.6	w.	2,320	16	Mobile, Ala.....	38.1	w.	4,960	31	Charleston, S. C.....	48.3	w.	14,640	21	Mobile, Ala.
North-Central ⁴	33.4	s.	1,720	13	Alpena, Mich.....	43.2	w.	4,790	29	Muskegon, Mich.....	59.8	wnw.	16,330	27	International Falls, Minn.
Central ⁵	38.8	ne.	1,650	11	Des Moines, Iowa.....	43.1	nw.	4,840	15	Wichita, Kans.....	58.4	sw.	9,440	31	Wichita, Kans.
South-Central ⁶	40.0	sw.	2,430	30	Abilene, Tex.....	43.6	wnw.	4,220	15	Little Rock, Ark.....	62.5	nw.	14,190	25	Big Spring, Tex.
Northwest ⁷	54.6	s.	1,210	24	Tatoosh Island, Wash.	48.0	sw.	4,780	24	Burns, Oreg.....	78.8	sw.	12,990	26	Billings, Mont.
West-Central ⁸	43.0	sse.	2,500	26	Sacramento, Calif.....	49.2	sse.	2,620	26	Sacramento, Calif.....	67.0	sw.	9,220	17	Redding, Calif.
Southwest ⁹	43.2	sw.	1,900	18	Winslow, Ariz.....	44.0	nw.	4,840	11	Las Vegas, Nev.....	60.0	w.	11,050	22	Phoenix, Ariz.
						44.0	s.	4,530	26	Sandberg, Calif.....					

¹ Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.

² Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.

³ South Carolina, Georgia, Florida, and Alabama.

⁴ Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.

⁵ Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.

⁶ Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.

⁷ Montana, Idaho, Washington, and Oregon.

⁸ Wyoming, Colorado, Utah, northern Nevada and northern California.

⁹ Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

RIVER STAGES AND FLOODS

By C. R. JORDAN

Precipitation during October as compared with normal was variable over the entire country. Amounts were well above normal over the northeastern section and extending as far south as Maryland and northeastern Virginia. The Ozark region, the North Central Plains, and the far Northwest also received above normal precipitation. Amounts were very scanty in sections of the Southwest and also the Southeast.

Unusually low river stages continued during October in most of the southern two-thirds of the country, especially in the southeastern section.

October was the second consecutive month with no floods of consequence reported in the United States. There were two periods of rather heavy rainfall over the Northeast during the month but the initial river stages were low and the soil was in most cases unusually dry with the result that bankful stages were reached only in a few headwater streams.

Atlantic Slope drainage.—Heavy rains, resulting in amounts of from 2 to 5 inches over much of the area, occurred in the northeastern section of the country from October 16–19. Flash floods resulted in some sections of Maine, especially in the Little River at Belfast, Maine, which carried away the dam providing the municipal water supply, a 200-foot steel bridge, and four smaller bridges, as well as causing some damage to streets and cellars in the vicinity. The Sandy River near Farming-

ton overflowed its banks and caused some damage to roads and cellars. Slight damage also resulted in the Androscoggin Valley. No estimate of the damage sustained has been compiled.

Rainfall of from 2 to 3 inches occurred again over the Northeast from October 26–28, and produced moderate rises in most of the streams. The Susquehanna River exceeded flood stage slightly at Oneonta, N. Y., on the 27th and the Tioughnioga River at Whitney Point, N. Y., reached a stage a little in excess of the established flood stage on the 29th. No damage resulted.

Mississippi Basin.—The Mississippi River just reached flood stage (12 feet) at Louisiana, Mo., on October 3 and 4. This stage resulted from the manipulation of Dam No. 24 and no damage occurred.

FLOOD-STAGE REPORT FOR OCTOBER 1943

[All dates in October]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
	<i>Feet</i>			<i>Feet</i>	
Tioughnioga: Whitney Point, N. Y....	12	29	29	12.6	29
Susquehanna: Oneonta, N. Y.....	12	27	27	12.1	27
MISSISSIPPI SYSTEM					
<i>Upper Mississippi Basin</i>					
Mississippi: Louisiana, Mo.....	12	3	4	12.0	3-4

CLIMATOLOGICAL DATA

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS

[For description of tables and charts, see Review January 1942, p. 15]

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Section	Temperature						Precipitation					
	Section average	Departure from the normal	Monthly extremes				Section average	Departure from the normal	Greatest monthly		Least monthly	
			Station	Highest	Date	Station	Lowest	Date	Station	Amount	Station	Amount
Alabama	61.9	-2.9	2 stations	92	3	Valley Head	26	18	Frisco City	2.60	Coffee Springs	0.00
Arizona	61.8	+1.2	Yuma Citrus	108	1	Alpine	15	23	Cibola	2.46	Yuma Valley	0.00
Arkansas	61.3	-1.5	4 stations	90	12	7 stations	27	16	Mena	6.51	Monticello	0.00
California	60.2	+2.2	2 stations	110	1	Boca	7	31	Elk Valley	10.53	6 stations	0.00
Colorado	47.4	+1.5	Two Buttes	92	11	Silverton	-1	31	Ames	4.01	Box Ranch	0.00
Florida	70.4	-2.6	Quincy	94	3	Vernon	29	18	Tavernier	15.46	3 stations	0.00
Georgia	62.5	-2.5	6 stations	94	15	Tallahassee	26	18	Dahlgren	3.71	19 stations	0.00
Idaho	49.0	+1.8	2 stations	95	1	Sun Valley	-3	23	Deception Creek	6.41	Bruneau	0.00
Illinois	55.0	-1.7	Olney	89	1	Freeport	21	28	La Harpe	4.36	Belvidere	0.72
Indiana	54.2	-1.8	Forest Reserve	92	10	4 stations	25	18	La Porte	2.67	Kokomo	0.57
Iowa	51.6	-1.1	4 stations	87	19	3 stations	15	16	Maquoketa	4.59	Winteret	0.32
Kansas	58.8	-1.5	Ashland	96	18	Burr Oak (near)	11	27	Pleasanton	5.38	Phillipsburg	0.00
Kentucky	56.7	-1.7	Princeton	89	11	St. John	21	18	Jenkins	3.76	Taylorsville	0.55
Louisiana	65.3	-3.2	2 stations	90	13	Tallulah	29	17	Pearl River	5.08	Colfax	0.19
Maryland-Delaware	54.6	-1.7	Woodstock, Md.	86	9	Oakland, Md.	19	5	Newark, Del.	7.71	Oakland, Md.	1.78
Michigan	47.6	-1.1	Wayne	85	12	Kenton	12	28	Suttons Bay	3.64	Stambaugh	0.81
Minnesota	47.6	+1.1	Montevideo	87	8	Hallock	11	30	Grand Marais	4.63	Faribault	0.42
Mississippi	63.1	-2.4	Bay Springs	92	3	2 stations	26	17	Pearlington	2.48	Hickory Flat	0.04
Missouri	56.3	-1.4	Union	90	20	do	19	16	Ava Ranger Station	6.61	Albany	0.62
Montana	48.0	+3.0	Glasgow	96	4	Wisdom	5	23	Belton	3.65	Columbus	0.08
Nebraska	52.0	+3.3	Benkelman	91	11	3 stations	14	16	Oakdale	3.35	Naponee	T
Nevada	52.9	+2.3	Overton	102	1	Golconda	10	31	Arthur	3.07	2 stations	0.00
New England	49.9	+4.4	Providence, R. I.	84	9	Somerset, Vt.	14	11	Rockland, Maine	9.86	Block Island, R. I.	2.53
New Jersey	53.5	-1.1	2 stations	87	17	2 stations	18	11	Lakewood	13.94	Cape May	4.20
New Mexico	53.0	-7.7	3 stations	92	1	Eagle Nest	9	27	Red River	2.60	21 stations	0.00
New York	49.0	-1.0	Port Jervis	85	7	2 stations	14	10	New York University	11.56	Angelica	2.59
North Carolina	58.4	-1.6	Monroe	92	21	Mount Mitchell	15	18	Highlands	3.00	Southport	T
North Dakota	48.2	+4.2	Crosby	89	3	Edmore	10	30	Wahpeton	2.02	Drake	0.04
Ohio	52.2	-1.4	Ironton	87	11	Fredericktown	24	20	Jefferson	4.13	Columbus	0.95
Oklahoma	60.7	-1.8	4 stations	95	18	2 stations	20	27	Quinton	11.61	Goodwell	0.06
Oregon	49.9	+1.1	2 stations	93	1	Olive Lake	8	31	Valsets	16.57	Enterprise	0.66
Pennsylvania	50.1	-2.5	Phoenixville	89	7	Phillipsburg	17	6	Pine Grove	10.68	Lake Lynn	2.15
South Carolina	61.9	-1.9	Miley	94	21	3 stations	26	18	Longcreek	3.94	15 stations	0.00
South Dakota	51.3	+2.6	Philip	91	11	Philip	12	21	Mitchell	4.73	Ottumwa	0.36
Tennessee	57.3	-2.5	2 stations	88	1	Erwin	19	18	Sneedville	3.98	McKenzie	0.26
Texas	65.5	-2.2	Follett	95	18	Miami	24	27	Trinidad	9.80	3 stations	0.00
Utah	51.6	+2.5	St. George	94	1	Clear Creek	-2	31	Silver Lake (Brighton)	5.82	Callao	0.02
Virginia	56.0	-1.4	Clarksburg	89	1	3 stations	22	18	Onley	7.12	Wytheville	0.80
Washington	50.7	+8.8	Mottinger	91	2	Republic	15	31	Naselle	13.70	Quincy (near)	0.94
West Virginia	52.4	-2.3	Hamlin	89	1	Pickens	19	21	Romney	5.45	Shinnston	0.92
Wisconsin	48.3	0	Danbury	85	8	Brule Island	15	28	Richland Center	6.59	Oshkosh	0.80
Wyoming	46.6	+2.9	3 stations	89	15	South Pass City	6	21	Beckler River	4.66	Saratoga	0.17
Alaska (September)	44.0	-1.1	View Cove	78	7	Wainwright	12	27	Little Port Walter	35.28	Point Lay	0.08
Hawaii	74.9	+7.7	Waianae	94	21	Kalihi	52	25	Kahana	28.20	9 stations	0.00
Puerto Rico	78.1	-1.1	Utua	95	28	Guineo Reservoir	56	12	Toro Negro Reservoir	31.45	Barceloneta	3.92

¹ Other dates also.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS

District and station	Elevation of instruments			Pressure			Temperature of the air										Precipitation		Wind																										
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean max., + mean min., +2	Departure from normal	Maximum	Date	Mean minimum	Date	Greatest daily range	Mean temperature of the dew-point	Mean relative humidity	Total	Departure from normal	Days with .001 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity			Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms															
																					Miles per hour	Direction	Date																						
New England																																6.6													
Eastport.....	75	67	85	29.85	29.94	-0.06	49.4	+1.9	72	9	54	32	10	44	23	42	81	5.11	-1.6	17	n.		33	se.	16	8	4	10	6.8	T	.0	0													
Greenville, Maine.....	1,070	6	41	28.79	29.97	-0.09	44.5	-4	73	13	54	19	11	35	47	39	7.74	-4.2	17	n.		33	e.	16	11	4	19	6.5	T	.0	0														
Portland, Maine ¹	103	5	43	29.83	29.95	-0.08	49.2	-1.5	80	9	58	22	11	41	38	42	83	6.55	+3.4	14	n.		35	e.	16	11	4	19	6.3	T	.0	0													
Concord ¹	289	4	45	29.64	29.97	-0.08	49.2	-1.3	78	13	57	25	10	39	41	40	81	3.82	+1.5	14	n.w.		30	e.	16	7	3	21	6.9	T	.0	0													
Burlington ¹	403	6	64	29.52	29.97	-0.07	47.9	-1.3	78	13	57	25	10	39	41	40	81	3.82	+1.5	14	n.w.		31	s.	14	5	5	21	7.4	T	.0	0													
Boston ¹	124	33	62	29.81	29.96	-0.10	53.8	-1.2	75	9	61	35	25	47	28	43	72	4.82	+1.7	13	n.w.		41	ne.	25	7	5	19	7.1	T	.0	0													
Nantucket.....	12	11	59	29.92	29.95	-0.10	55.2	-1.2	75	9	60	41	12	50	22	49	85	3.72	+1.3	14	n.e.		37	ne.	10	8	5	18	6.0	T	.0	0													
Block Island.....	26	11	46	29.92	29.96	-0.09	55.2	-1.2	75	9	60	41	12	50	22	49	85	3.72	+1.3	14	n.e.		37	ne.	10	8	5	18	6.0	T	.0	0													
Providence ¹	159	46	60	29.78	29.97	-0.08	54.1	+1.9	84	9	62	31	11	46	33	44	79	4.39	+1.3	6	n.		49	e.	26	14	5	12	5.1	T	.0	0													
Hartford ¹	159	5	44	29.79	29.98	-0.08	52.0	+1.8	83	9	62	31	11	46	33	44	79	4.39	+1.3	6	n.		35	sw.	28	7	6	18	6.7	T	.0	0													
New Haven ¹	107	5	39	29.85	29.98	-0.08	52.6	-1.2	73	9	61	30	11	44	34	44	76	4.03	+1.7	12	ne.		26	w.	28	11	5	15	5.9	T	.0	0													
Middle Atlantic States																																5.5													
Albany ¹	97	26	40	29.85	29.97	-0.09	50.0	+7	77	9	59	22	11	40	40	40	78	4.92	+2.5	13	n.		32	n.	9	8	5	18	6.5	T	.0	0													
Binghamton ¹	871	60	79	29.04	30.01	-0.05	49.4	-6	80	9	59	28	6	40	42	39	82	5.98	+3.0	10	w.		20	sw.	17	8	4	19	6.9	T	.0	1													
New York.....	314	415	454	29.62	29.97	-0.09	55.0	-1.3	78	9	62	41	31	48	28	43	70	9.24	-5.7	11	n.w.		46	s.	16	9	8	14	5.8	T	.0	2													
Harrisburg.....	374	30	49	29.58	30.00	-0.08	53.5	-1.3	84	8	62	35	11	44	37	42	73	6.82	+3.9	10	w.		29	s.	16	12	4	15	5.8	T	.0	2													
Philadelphia ¹	114	6	56	29.94	29.98	-0.09	54.0	-3.8	82	8	63	35	11	45	37	44	77	5.21	+2.4	10	n.w.		32	ne.	26	9	6	16	6.4	T	.0	0													
Reading.....	323	47	306	29.63	30.00	-0.09	53.8	-1.7	82	8	63	34	11	45	35	44	77	5.21	+2.4	10	n.w.		32	ne.	26	9	6	16	6.4	T	.0	0													
Seranton.....	805	72	104	29.12	30.00	-0.07	50.4	-1.5	78	8	59	30	6	42	41	46	76	7.93	+4.7	9	n.		34	e.	1	11	5	15	5.8	T	.0	1													
Atlantic City.....	52	37	172	29.90	29.98	-0.09	56.4	-5	75	8	63	41	21	50	36	48	78	5.12	+2.3	11	n.w.		34	ne.	26	11	6	17	6.1	T	.0	0													
Trenton.....	190	89	107	29.76	29.99	-0.09	54.0	-1.6	81	8	62	36	11	45	33	44	76	5.12	+2.3	11	n.w.		34	ne.	26	11	6	17	6.1	T	.0	0													
Baltimore ¹	123	100	215	29.85	29.99	-0.09	56.6	-1.6	84	9	65	42	18	48	32	45	73	6.29	+3.4	8	n.		34	ne.	26	11	6	17	6.1	T	.0	0													
Washington ¹	112	56	100	29.87	30.00	-0.08	56.4	-1.0	84	9	66	40	21	47	37	45	72	4.29	+1.8	9	n.		34	ne.	26	11	6	17	6.1	T	.0	0													
Cape Henry.....	18	8	54	29.95	29.98	-0.09	59.9	-2.2	83	9	66	44	29	54	29	50	77	4.46	+1.4	7	n.		34	ne.	26	11	6	17	6.1	T	.0	0													
Lynchburg.....	686	144	184	29.27	30.00	-0.09	57.8	-7	84	2	70	31	18	46	39	44	70	1.30	-1.8	7	n.		34	ne.	26	11	6	17	6.1	T	.0	0													
Norfolk ¹	91	80	125	29.89	30.00	-0.07	60.2	-2.3	81	9	67	43	29	53	27	50	80	3.90	+1.9	7	n.		24	ne.	25	15	9	7	4.5	T	.0	2													
Richmond.....	144	11	52	29.82	29.98	-0.10	58.2	-1.4	82	9	70	35	18	47	36	45	74	2.11	-0.8	6	n.		26	sw.	16	17	7	7	3.9	T	.0	2													
South Atlantic States																																62.7		-1.5		75		0.43		-2.8					
Asheville.....	2,253	77	92	27.68	30.04	-0.05	54.9	-4	83	21	67	26	18	43	41	41	72	5.59	-2.2	9	n.w.		26	n.w.	17	9	10	12	5.5	T	.0	0													
Charlotte ¹	779	63	86	29.17	30.01	-0.07	60.8	-9	88	21	72	34	18	49	35	46	73	3.35	-2.6	4	n.		21	n.w.	22	16	9	6	3.9	T	.0	0													
Greensboro ¹	886	5	56	29.06	30.01	-0.07	57.0	-8	85	1	71	25	18	43	42	44	74	7.74	-4.2	7	n.		25	n.w.	22	16	9	6	3.9	T	.0	0													
Hatteras.....	11	5	50	29.95	29.97	-0.09	63.5	-2.4	78	1	69	47	20	58	21	56	82	1.42	-3.5	5	n.		31	w.	25	16	8	7	4.1	T	.0	1													
Raleigh ¹	376	27	69	29.50	30.00	-0.07	60.1	-1	78	1	72	35	18	48	38	46	72	8.1	-2.0	5	n.		30	w.	16	20	6	5	3.2	T	.0	3													
Wilmington.....	72	73	107	29.90	29.98	-0.08	63.7	-1.6	84	21	74	38	18	53	31	53	80	0.02	-3.2	1	n.		22	w.	16	19	8	4	3.0	T	.0	0													
Charleston ¹	48	11	92	29.93	29.99	-0.07	65.6	-2.2	85	22	74	42	18	57	25	53	82	0.05	-3.2	3	n.		23	ne.	11	20	7	4	2.9	T	.0	0													
Columbia, S. C. ¹	349	70	91	29.62	30.01	-0.06	63.4	-9	89	21	76	35	18	51	36	51	80	1.13	-2.4	4	n.		22	sw.	30	17	9	5	3.3	T	.0	0													
Greenville, S. C. ¹	1,040	18	36	29.80	30.01	-0.06	60.2	-0	85	21	71	32	18	50	32	44	66	8.2	-2.3	6	n.		25	n.	22	13	9	9	4.4	T	.0	2													
Augusta ¹	182	62	77	29.80	30.00	-0.07	63.6	-1.7	91	21	76	35	18	51	39	45	59	0.1	-2.4	1	n.		19	ne.	6	19	8	4	3.1	T	.0	0													
Savannah ¹	65	73	152	29.93	30.00	-0.05	66.2	-1.7	90	21	78	40	18	55	34	53	77	0.06	-2.9	1	n.		27	w.	28	18	7	6	3.2	T	.0	0													
Jacksonville ¹	43	86	110	29.94	29.99	-0.03	67.6	-3.5	88	22	77	42	17	58	35	56	80	4.48	-4.0	5	n.		23	ne.	6	15	9	7	3.8	T	.0	0													
Florida Peninsula																																75.1		-1.7		82		4.30		-1.5					
Key West ¹	21	10	64	29.87	29.90	-0.04	78.2	-9	89	9	83	64	28	74	16	70	82	7.95	+2.0	10	n.		25	w.	1	11	10	10	5.0	T	.0	5													
Miami ¹	25	242	249	29.88	29.92	-0.05	75.2	-1.8	88	4	80	56	28	71	17	67	86	3.91	-4.5	10	n.		36	se.	25	11	11	9	5.3	T	.0	3													
Tampa ¹	35	6	43	29.91	29.96	-0.02	71.8	-2.5	87	14	81	48	17	63	31	61	78	1.04	-2.0	4	n.		30	ne.	7	18	3	10	4.0	T	.0	2													
East Gulf States																																64.2		-2.5		74		0.81		-2.1					
Atlanta ¹	1,173	33	72	28.78	30.01	-0.06	60.8	-1.9	85	20	71	35	18	50	34	46	68	4.47	-2.2	4	n.w.		31	n.w.	16	14	9	8	4.4	T	.0	1													
Macon ¹	370	79	87	29.61	30.00	-0.06	62.4	-2.1	91	20	75	34	18	50	46	46	64	1.19	-2.2	2	n.		18	n.w.	16	17	7	7	3.8	T	.0	0													
Thomasville.....	273	49	58	29.72			66.9	-1.3	90	21	80	36	17	54	37			0.4	-2.9	1	n.											0													
Apalachicola.....	35	11	51	29.95	29.99	-0.07	67.4	-3.2	85	3	76	44	17	59	25	57	76	2.25	-2.9	1	n.		22	e.	4	18	9	4	3.3	T	.0	0													
Pensacola.....	56	54	79	29.96	30.01	-0.02	67.0	-2.8	87	3	76	40	27	58	29	54	76	1.11	-3.1	1	n.		19	n.w.	16	17	10	4	3.5	T	.0	0													
Aniston.....	741	9					59.6	-2.8	85	3	72	30	18	47	39			1.30	-1.3	4	n.											1													
Birmingham ¹	700	5	62	29.28	30.04	-0.03	60.4	-4.4	88	3	74	31	17	47	43	48	76	1.26	-1.6	4	n.		26	n.w.	15	13	7	11	4.6	T	.0	1													
Mobile ¹	87	86	161	29.96	30.03	-0.01	65.8	-3.5																																					

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS—Continued

District and station	Elevation of instruments			Pressure		Temperature of the air										Precipitation		Wind					Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow sleet, and ice on ground at end of month	Number of days with thunderstorms			
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean max. + min.		Departure from normal	Maximum	Date	Mean minimum	Date	Mean	Greatest daily range	Mean temperature of dew-point	Mean relative humidity	Total	Departure from normal	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity		Miles per hour	Direction	Date					
							°F.	°F.		°F.	°F.	°F.	°F.	°F.	°F.	°F.	%	In.	In.	Miles			°F.	°F.								
Ohio Valley and Tennessee																																
Chattanooga ¹	762	6	66	29.21	30.03	-.06	56.3	-1.4	84	20	71	28	18	42	43	46	82	2.39	-.6	6	5.6	ne.	28	nw.	15	15	6	10	4.8	.0	1	
Knoxville ¹	995	27	53	28.97	30.04	-.05	56.8	-3.1	82	2	69	30	18	44	36	45	74	3.70	+1.1	6	6.6	ne.	31	w.	15	12	10	9	4.5	.0	1	
Memphis ¹	399	5	86	29.60	30.03	-.04	60.8	-2.5	84	11	73	30	17	49	37	47	72	.45	-2.2	3	8.2	n.	21	n.	15	15	6	10	4.3	.0	0	
Nashville ¹	546	5	72	29.44	30.04	-.04	58.5	-2.2	86	1	71	33	17	47	39	44	69	.81	-1.7	5	7.7	n.	26	s.	13	14	9	8	3.8	.0	0	
Lexington	989	6	28	29.97	30.07	-.05	56.9	-.5	88	1	70	32	18	44	43	43	70	1.61	-1.0	11	7.7	s.	26	s.	13	14	9	8	3.8	.0	0	
Louisville ¹	525	106	120	29.46	30.03	-.05	58.2	+7.7	83	1	67	39	17	49	33	43	70	1.12	-1.5	7	8.2	n.	27	s.	13	18	3	10	4.4	.0	0	
Evansville ¹	431	12	40	29.56	30.04	-.04	56.2	-.8	85	1	68	30	17	44	38	44	73	1.48	-1.3	7	8.2	n.	26	s.	13	13	10	8	4.7	.0	0	
Indianapolis ¹	823	5	54	29.14	30.03	-.04	53.4	-7.4	84	1	65	27	17	42	38	42	76	1.37	-.7	7	9.9	ne.	31	w.	18	15	7	9	4.6	.0	1	
Terre Haute ¹	575	68	149	29.42	30.05	-.05	56.6	-.7	87	1	68	33	17	46	34	43	76	2.01	-.7	8	9.4	n.	26	s.	13	13	10	8	4.7	.0	0	
Cincinnati ¹	627	11	51	29.35	30.04	-.04	56.1	+4.4	86	11	67	34	17	45	39	42	78	1.36	-1.2	11	7.2	ne.	23	sw.	18	18	3	10	4.5	.0	0	
Columbus ²	822	90	110	29.14	30.03	-.05	54.3	-.9	81	11	64	34	18	45	36	40	74	.95	-1.5	7	8.6	n.	40	sw.	18	15	4	12	4.7	.0	0	
Vandalia ¹	1,003	6	55	28.95	30.04	-.05	53.8	-1.2	81	1	64	34	18	44	32	42	75	2.08	-.5	8	10.3	n.	39	w.	18	14	7	10	4.7	.0	1	
Elkins ²	1,947	61	78	27.97	30.05	-.05	49.6	-2.7	76	12	60	28	6	39	46	40	83	1.54	-1.4	11	5.4	nw.	23	sw.	18	11	5	15	5.9	.0	0	
Parkersburg	637	77	84	29.32	30.02	-.06	54.4	-1.7	82	1	65	32	20	43	40	44	77	1.29	-1.2	9	5.2	n.	22	sw.	18	15	5	11	5.0	.0	1	
Pittsburgh ¹	842	39	54	29.10	30.00	-.08	51.2	-2.9	78	8	60	35	18	43	34	39	72	3.58	+1.1	12	9.9	nw.	26	nw.	22	9	7	15	6.4	.0	1	
Lower Lake Region																																
Buffalo ¹	768	34	96	29.17	30.01	-.04	48.4	-3.5	79	13	57	32	19	40	33	40	80	4.01	+7.7	11	12.6	ne.	38	sw.	29	9	7	15	6.2	1.5	0	
Canton	448	10	61	29.49	29.98	-.06	47.2	-.0	80	13	56	25	10	38	37	39	79	4.49	+1.5	15	8.7	e.	30	e.	27	4	9	18	7.2	.0	1	
Oswego	335	71	85	29.61	29.99	-.06	49.0	-2.2	73	13	56	34	10	42	28	41	75	6.23	+3.0	15	9.3	n.	26	ne.	9	8	6	17	6.5	.0	1	
Rochester ¹	523	5	69	29.43	30.02	-.03	48.6	-.9	78	13	57	31	11	40	39	40	81	4.51	+1.9	13	9.6	w.	38	w.	29	7	7	17	6.7	.0	0	
Syracuse ¹	596	5	57	29.35	30.02	-.04	48.6	-.9	77	7	58	26	25	39	38	41	83	5.44	+2.3	15	8.9	sw.	28	sw.	17	6	8	17	6.8	.0	1	
Erie ²	714	57	81	29.24	30.02	-.03	51.0	-2.4	81	12	57	34	18	45	32	41	82	6.40	+2.7	15	8.6	e.	24	w.	17	7	9	15	6.7	8.2	.0	1
Cleveland ¹	762	27	54	29.19	30.03	-.03	51.8	-.9	82	12	61	32	17	42	36	42	77	3.40	+6.6	15	10.4	sw.	35	ne.	15	11	7	13	5.7	.0	0	
Sandusky	629	5	67	29.34	30.04	-.02	53.1	-1.2	83	12	61	34	17	45	31	42	77	2.01	-.4	15	9.3	ne.	25	nw.	16	12	5	14	5.5	.0	0	
Toledo	628	5	47	29.34	30.04	-.01	50.9	-2.5	82	12	61	31	20	41	41	41	80	2.06	-.3	12	10.6	ne.	34	nw.	16	12	7	12	5.5	.0	0	
Fort Wayne ¹	857	5	33	29.10	30.04	-.05	50.9	-1.8	80	1	62	29	19	40	40	40	76	.98	-1.6	6	7.7	de.	32	w.	18	12	10	9	5.0	.0	0	
Detroit ¹	730	5	78	29.24	30.04	-.01	50.8	-1.1	81	12	59	32	17	42	37	40	76	1.30	-1.1	10	9.7	n.	31	n.	16	10	6	15	5.9	1.0	.0	0
Upper Lake Region																																
Alpena	609	5	89	29.37	30.05	+0.02	46.5	-.6	79	6	53	32	17	40	41	39	82	1.88	-.8	11	10.6	nw.	30	se.	13	7	8	16	6.5	2.0	.0	0
Escanaba	612	51	72	29.38	30.06	+0.05	47.3	+1.3	82	6	54	31	28	40	40	39	78	2.08	-.6	6	12.3	n.	34	n.	16	8	9	14	6.1	.0	0	
Grand Rapids ¹	707	70	244	29.27	30.05	+0.01	50.9	-.3	81	12	59	34	27	42	33	39	79	1.30	-1.5	8	10.8	n.	35	sw.	13	11	7	13	5.5	.0	0	
Lansing ¹	878	5	90	29.09	30.05	-.03	48.4	-1.9	77	12	57	32	16	40	33	40	82	1.80	-.7	9	8.2	n.	25	w.	18	11	5	15	5.8	1.7	.0	0
Marquette	734	44	73	29.24	30.06	+0.05	47.2	-.5	80	6	54	29	26	40	30	38	77	2.02	-.7	12	8.8	nw.	27	s.	10	9	7	15	6.3	3.0	.0	0
Sault Ste. Marie ¹	614	11	43	29.36	30.05	+0.04	44.2	+1.2	77	12	53	28	18	35	40	36	81	2.72	-.4	9	10.5	e.	36	sw.	14	10	7	14	5.6	2.5	.0	0
Chicago ¹	673	5	36	29.31	30.05	+0.01	53.7	+1.2	82	11	63	31	17	44	33	41	73	1.49	-1.1	9	9.7	ne.	26	n.	16	12	7	12	5.0	.0	0	
Green Bay	617	109	141	29.38	30.06	+0.04	49.0	-.5	80	6	57	31	30	41	34	39	78	.83	-1.7	7	11.0	n.	28	ne.	9	10	8	13	5.6	.0	0	
Milwaukee ¹	681	33	66	29.30	30.06	+0.03	50.3	-.8	82	11	59	33	30	42	33	40	78	.83	-1.5	5	12.8	nw.	36	s.	13	12	10	9	4.8	.0	0	
Duluth ¹	1,133	5	47	28.83	30.07	+0.07	47.4	+2.9	82	8	56	25	17	38	35	34	78	2.09	-2.2	5	12.2	nw.	42	nw.	13	13	9	9	5.0	.0	0	
North Dakota																																
Fargo ¹	940	5	43	28.99	30.02	+0.02	48.4	+3.0	83	11	62	20	30	35	42	35	68	1.64	.0	4	12.1	s.	40	se.	19	17	7	7	3.7	.0	1	
Bismarck ¹	1,677	5	43	28.19	29.98	-.01	49.0	+5.4	86	10	63	22	17	35	50	34	66	1.54	-.6	6	10.2	se.	38	nw.	12	14	8	9	4.5	5.0	.0	1
Devils Lake	1,478	11	44	28.41	30.01	+0.02	48.0	+5.6	83	8	62	17	30	34	43	32	62	.40	-.8	3	8.7	se.	26	se.	19	15	6	10	4.6	1.5	1.5	2
Lemmon, S. Dak.	2,602	4	38	29.11	30.03	-.04	47.1	-.7	87	4	62	16	30	32	46	33	62	.70	-.2	3	6.2	se.	26	w.	20	15	3	13	4.7	.7	.2	0
Grand Forks ¹	832	4	41	29.11	30.03	-.04	47.1	-.7	87	4	62	16	30	32	46	33	62	.70	-.2	3	6.2	se.	26	w.	20	15	3	13	4.7	.7	.2	0
Williston	1,																															

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS—Continued

District and station	Elevation of instruments			Pressure			Temperature of the air										Precipitation			Wind				Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean max. +2	Mean min. -2	Maximum	Date	Minimum	Date	Mean minimum	Greatest daily range	Mean temperature of the air	Mean relative humidity	Total	Departure from normal	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity									Date																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Northern Slope																														0-10		5.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS—Continued

District and station	Elevation of instruments			Pressure		Temperature of the air										Mean temperature of the dew-point	Mean relative humidity	Precipitation			Wind				Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms				
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean max. + mean min. +2	Departure from normal	Maximum	Date	Mean minimum	Date	Mean	Greatest daily range	Total			Departure from normal	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity										
																						Miles per hour	Direction	Date								
Alaska	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	In.	In.	Miles					0-10	In.	In.							
Anchorage	132	5	22		29.53		36.5	+5	57	6	44	7	30	29		32	76	.47	-1.7	7	3.9	ne.	17	s.	6	3	6	22		T	T	0
Fairbanks ¹	455	4	63	29.11	29.62		29.5	+2.9	60	6	38	-2	131	21	31	25	78	.87	.0	13	5.1	e.	30	se.	5	5	5	21	7.4	5.0	4.2	0
Juneau ¹	80	6	21		29.76		42.3		59	6	48	41	30	36		39	84	9.26		19	9.5	e.	40	e.	6	3	4	24		T	T	0
Nome	22	25	56		29.57		32.0	+2.7	51	8	38	2	29	27		39	82	1.25	-1.3	15	9.6	ne.	33	sw.	30	5	5	21		3.1	2.0	0
Hawaiian Islands																																
Honolulu	38	86	100	29.06	29.08		78.0	+1.2	85	1	83	71	30	74	12		.24	-1.3	11	8.7	ne.	23	e.	23	8	18	5	5.0	.0	.0	0	
Alaska																																
Bethel	28	7	31	29.58	29.62		42.4	-2.9	61	2	49	26	25	36	21	38	81	1.73	+1.5	15	n.				3	7	20	8.1	.4	.0	0	
Fairbanks	455	4	63	29.14	29.64		43.6	—	66	1	54	27	18	34	33	37	76	1.12	—	12	6.0	e.	26	sw.	13	1	2	27	8.8	T	.0	0
Ketchikan	75	69	90	29.98	30.00		54.2	+5	72	7	60	38	18	48	25	49	84	15.00	+2.8	19	7.5	se.	22	se.	25	2	5	23	8.5	.0	.0	0
Kotzebue	20	5	31	29.66	29.67		39.6	-1.2	57	1	44	27	30	35	15	35	83	1.00	—	14	w.				2	7	21	8.0	T	.0	0	
McGrath	331	5	31	29.27	29.65		43.6	—	63	1	50	29	24	37	25	37	77	1.80	—	17	n.	15	sw.	13	0	6	24	8.8	.5	.0	0	
Northway		5	32	27.85			43.8	—	65	1	53	25	18	34	30	35	73	.57	—		nw.				0	13	17	8.0	T	.0	0	
Late Reports for September 1943																																

¹ Data are airport records.² Barometric data (adjusted to old city elevation) and hygrometric data from airport; otherwise city office records.³ Observations taken bihourly.⁴ Pressure (adjusted to old city elevation), temperature, and hygrometric data from airport; otherwise city office records.⁵ Temperature and precipitation from city office records, other data from airport.

Note.—Except as indicated by 1, 2, 4, and 5 data in table are city office records.

SEVERAL LOCAL STORMS, OCTOBER 1943

(Compiled by Mary O. Souder)

The table herewith contains such data as has been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the United States Meteorological Yearbook.

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Norfolk, Hampton Roads, and Cape Charles, Va., and vicinities.	Sept. 29-Oct. 1	P. m., Sept. 29	150	1	\$20,000	Gales and heavy rains.	This storm of tropical origin reached these areas on the night of Sept. 29. High tides and heavy rains caused flooding of some streets in the downtown portion of Norfolk. A small ship and several small boats were sunk. Property damage was estimated at \$5,000; loss in crops about \$15,000.
Michigan, eastern, upper and north-central lower peninsulas.	Oct. 16-19					Snow	More than 10 inches fell at several stations. Highway and rail traffic hampered and snow plows were required to clear roads on the 17th; however, all snow had melted by the 20th. Although snowfall in much of southern Lower Michigan and western Upper Michigan was of little consequence this was the third snowiest October of record.
Altus, Okla.	22				250,000	Hail	Severe loss in cotton and feed crops over an area 30 by 7 miles in parts of Greer, Harmon, and Jackson Counties. Near the center of the area, cotton and feed were a total loss. Estimated loss in cotton alone, \$250,000.
Cloud Chief and Cordell, Okla.	22				5,000	do	Much loss in cotton over a path 10 by 5 miles.
Stillwater, Okla.	23				35,000	do	Severe loss to 40 airplanes at the Municipal Airport.
Coasts of New York and New Jersey.	27					Wind and rain	A 75-mile-an-hour wind, accompanied by torrential rains, battered the New York and New Jersey coasts, causing property damage which may run into millions of dollars. High seas, augmented by an incoming tide, raced over breakwaters and poured tons of water and sand over coastal highways the length of New Jersey and Long Island. Vehicular traffic was virtually halted and in some places railroad service was abandoned when roadbeds were washed out. Many cities and towns were without electric service and the Bell Telephone Company reported that 100 of its lines were down in Monmouth County, N. J. Sections of boardwalks in several New Jersey resort cities were swept away. In Wildwood, N. J., and vicinity, 5 public schools were closed, the pupils being marooned in their homes.
Hickman, Nebr., vicinity of	30	P. m.	400	0	4,000	Tornado and hail	Funnel-cloud observed. A considerable fall of hail occurred, but there was no damage, as crops had been previously gathered. Path 5 or 6 miles long.
Lincoln, Nebr., vicinity of	30	do		0	4,000	Tornado	Damage to farm buildings.

¹ Miles instead of yards.

SOLAR RADIATION AND SUNSPOT DATA FOR OCTOBER 1943

[Solar Radiation Investigations Section, I. F. HAND in charge]

SOLAR RADIATION OBSERVATIONS

Explanations of the tables and references to descriptions of instruments, stations, and methods of observation, and to summaries of data, are given in the January 1942 REVIEW, page 20; a list of pyrheliometric stations is also given in the REVIEW for January 1943, page 12.

TABLE 1.—Solar radiation intensities during October 1943

[Gram-calories per minute per square centimeter of normal surface]

Madison, Wis.

Date	Sun's zenith distance										Local mean solar time
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	Air mass										
	A. M.					P. M.					
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.
Oct. 2.....	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Oct. 5.....	8.1	0.61	0.84	1.03	1.21	1.44	1.21	1.03	0.84	0.61	9.4
Oct. 6.....	8.4	.59	.69	.83	1.02	1.26	1.02	.83	.69	.59	9.1
Oct. 7.....	9.8	.61	.75	.87	1.07	1.34	1.14	.87	.75	.61	9.8
Oct. 9.....	9.4	.64	.76	.94	1.11	1.39	1.06	.94	.76	.64	9.8
Oct. 10.....	9.1	.64	.76	.87	.98	1.25	1.06	.87	.76	.64	10.6
Oct. 11.....	11.0	.40	.59	.69	.88	1.17	1.06	.69	.59	.40	12.3
Oct. 14.....	6.1	.73	.83	.96	1.14	1.34	1.14	.96	.83	.73	6.9
Oct. 18.....	6.4	.84	.96	1.07	1.25	1.56	1.31	1.07	.96	.84	4.4
Oct. 19.....	4.2	.59	.79	1.07	1.25	1.43	1.18	1.07	.79	.59	7.2
Oct. 22.....	6.4	.84	.96	1.15	1.31	1.47	1.26	.96	.84	.84	7.8
Oct. 29.....	6.6	.88	.98	1.19	1.31	1.54	1.24	.98	.88	.88	7.2
Oct. 30.....	4.4	.88	.98	1.07	1.25	1.43	1.18	1.07	.98	.88	5.6
Means.....		.66	.80	.96	1.13	1.38	1.18	.96	.80	.66	
Departures.....		-.11	-.10	-.08	-.07	-.05	-.03	-.08	-.10	-.11	

Lincoln, Nebr.

Date	Sun's zenith distance										Local mean solar time
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	Air mass										
	A. M.					P. M.					
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.
Oct. 2.....	6.1			1.14	1.36	1.61	1.23	1.14			5.8
Oct. 4.....	6.3				1.29	1.12	1.12				8.0
Oct. 5.....	5.5				1.10	1.44	1.21	1.03	0.88	0.79	5.5
Oct. 7.....	5.5				1.42	1.15	.94	.79	.72		7.2
Oct. 8.....	6.1				1.19	1.41	1.21	.99			6.1
Oct. 9.....	6.5				1.19	1.41	1.19	.97	.82	.75	6.3
Oct. 16.....	3.0	0.68	0.75	1.07	1.22	1.46	1.24	1.07			4.6
Oct. 18.....	6.1	.60	.72	.92	1.12	1.41	1.14	.92	.79	.69	11.8
Oct. 19.....	13.2	.60	.72	.92	1.12	1.41	1.14	.92	.79	.69	11.8
Oct. 21.....	6.8	.64	.81	1.07	1.23	1.44	1.25	1.10	.94	.84	8.5
Means.....		.64	.76	1.05	1.22	1.47	1.20	1.03	.87	.77	
Departures.....		-.17	-.16	-.03	-.05	-.01	-.05	-.04	-.06	-.04	

TABLE 1.—Solar radiation intensities during October 1943

[Gram-calories per minute per square centimeter of normal surface]

Blue Hill, Mass.

Date	Sun's zenith distance										Local mean solar time
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	Air mass										
	A. M.					P. M.					
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.
Oct. 5.....	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Oct. 6.....	7.8	0.95	1.03	1.11	1.15	1.19	1.19	1.08	0.86	0.74	6.9
Oct. 7.....	6.1	.97	.85	.99	1.15	1.09	1.08	.86	.76	.65	6.6
Oct. 9.....	6.9	.97	.85	.99	1.15	1.09	1.08	.86	.76	.65	10.2
Oct. 10.....	11.8	.66	.66	.76	1.09	1.09	1.08	.86	.76	.65	8.4
Oct. 11.....	5.6	.76	.90	.99	1.12	1.30	1.49	1.30	1.19	1.11	5.1
Oct. 12.....	4.2	.76	.90	.99	1.12	1.30	1.49	1.30	1.19	1.11	5.1
Oct. 13.....	7.8	.91	1.02	1.15	1.28	1.18	1.04	.86	.76	.65	8.1
Oct. 17.....	6.9	.60	.69	.86	1.04	1.04	1.04	.89	.77	.65	4.4
Oct. 29.....	17.1	.81	.91	1.04	1.18	1.30	1.49	1.30	1.19	1.11	5.1
Oct. 31.....	7.8	.91	1.04	1.18	1.30	1.49	1.30	1.19	1.11	1.11	5.1
Means.....	5.3	.98	1.07	1.18	1.30	1.49	1.30	1.19	1.11	1.11	5.1
Departures.....		-.82	.90	1.01	1.18	(1.49)	1.14	1.00	.88	.80	
		-.06	-.06	-.08	-.05	+.11	-.06	-.03	-.03	.00	

Albuquerque, N. Mex.

Date	Sun's zenith distance										Local mean solar time
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	Air mass										
	A. M.					P. M.					
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.
Oct. 3.....	8.1				1.24	1.47					8.5
Oct. 4.....	8.8	0.84	0.95	1.06	1.24	1.47					8.5
Oct. 6.....	9.8	.85	.97	1.08	1.27	1.47					8.5
Oct. 7.....	9.1	.73	.85	1.04	1.18	1.47					7.1
Oct. 8.....	8.5			1.04	1.18	1.47					7.1
Oct. 10.....	6.4				1.24	1.47	1.06	0.93	0.81		6.8
Oct. 11.....	6.8	.77			1.24	1.47	1.06	0.93	0.81		11.5
Oct. 13.....	5.1	1.09			1.42	1.27	1.18				9.1
Oct. 14.....	4.1			1.27	1.39	1.39	1.18				5.1
Oct. 15.....	5.4			1.17	1.34	1.34	1.18				7.1
Oct. 16.....	6.1	.98	1.12	1.22	1.36	1.42	1.29	1.19	1.08		9.5
Oct. 17.....	5.4	1.00	1.11	1.21	1.35	1.42	1.29	1.19	1.08		5.4
Oct. 18.....	5.4	.96	1.09	1.19	1.39	1.46	1.34	1.18	1.10	.97	5.1
Oct. 20.....	5.8			1.16	1.37	1.40	1.17	.86	.50		5.8
Oct. 21.....	5.4	1.05	1.16	1.24	1.37	1.40	1.17	.86	.50		7.1
Oct. 22.....	5.4	.92	1.05	1.17	1.32	1.40	1.17	.86	.50		5.4
Oct. 23.....	5.1			1.24	1.37	1.40	1.17	.86	.50		5.4
Oct. 24.....	3.7	1.02	1.14	1.24	1.37	1.40	1.17	.86	.50		5.4
Oct. 25.....	4.1	.99	1.11	1.21	1.32	1.42	1.38	1.21	1.09	.90	5.1
Oct. 27.....	3.7			1.22	1.36	1.40	1.17	.86	.50		6.1
Oct. 30.....	6.4			1.26	1.36	1.40	1.17	.86	.50		6.4
Oct. 31.....	5.4			1.13	1.22	1.28	1.17	.86	.50		4.4
Means.....		.93	1.06	1.18	1.30	1.53	1.36	1.19	1.01	.74	
Departures.....		+.01	+.02	+.02	.00	.00	+.02	.00	-.04	-.15	

*Extrapolated.

TABLE 2.—Daily totals and weekly means of solar radiation (direct+diffuse) received on a horizontal surface

[Gram-calories per square centimeter]

Date	Washington	Madison	Lincoln	East Lansing	New York	Fairbanks	Nashville	Twin Falls	La Jolla	New Orleans	Riverside	Blue Hill	Ithaca	Newport	State College	Put-in-Bay	East Wareham	Fresno	Davis, Calif.
1943	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
Oct. 1.	189	196	396	260	74		344	432	326	518	435	185	97	142	66	340	114	449	477
Oct. 2.	275	437	453	343	233		215	416	411	563	420	85	37	178	105	459	153	458	480
Oct. 3.	386	437	437	207	436		324	364	304	540	349	210	108	230	371	397	216	466	470
Oct. 4.	441	368	427	323	258		439	366	178	478	421	221	305	284	354	416	126	421	470
Oct. 5.	404	399	432	318	372		409	339	239	300	415	312	226	378	396	420	259	440	466
Oct. 6.	430	405	422	347	402		315	251	340	437	332	432	409	446	414	403	358	449	482
Oct. 7.	347	403	410	355	339		383	298	305	561	346	397	377	380	353	413	324	423	399
Mean	362	282	425	307	301	100	347	356	300	485	388	263	227	291	294	407	221	444	464
Departure	+32	+2	+88		-5	-15	+29	-9	-85	+106	+6	-49	-56	+3	+9	+63	-90	+18	+20
Oct. 8.	389	326	420	209	270		287	278	343	504	356	332	370	328	363	307	285	433	204
Oct. 9.	335	359	394	264	306		324	356	342	488	368	350	334	332	328	303	284	421	450
Oct. 10.	115	345	392	362	299		374	168	432	408	427	443	409	425	443	383	257	401	391
Oct. 11.	412	328	341	289	309		366	278	343	399	425	393	386	409	394	336	346	441	469
Oct. 12.	379	174	71	301	305		366	386	350	236	434	413	371	389	388	343	331	438	445
Oct. 13.	408	79	377	113	303		188	322	402	164	406	367	332	374	362	217	318	365	436
Oct. 14.	162	360	336	236	181		425	380	316	556	375	344	82	390	96	302	330	408	436
Mean	314	282	333	253	282	88	333	310	361	393	399	382	326	378	339	326	307	415	404
Departure	+5	+30	+28		-11	-5	+52	-36	-32	+16	+28	+55	+42	+44	+78	+38	+25	+16	+9
Oct. 15.	150	116	209	51	119		264	360	274	538	389	191	43	192	63	165	183	412	421
Oct. 16.	126	143	389	70	82		27	351	279	584	391	112	76	113	95	21	111	404	416
Oct. 17.	355	385	387	88	328		395	127	310	537	261	278	200	371	70	38	226	344	320
Oct. 18.	318	379	366	74	229		398	49	168	508	101	122	128	173	94	69	157	287	417
Oct. 19.	190	353	348	246	247		380	332	387	516	426	167	63	186	60	156	161	367	201
Oct. 20.	403	285	367	309	302		384	90	280	401	280	118	34	144	375	391	120	328	126
Oct. 21.	384	65	374	189	345		206	204	410	452	330	276	234	293	358	283	171	354	420
Mean	275	247	357	147	236	91	294	216	301	505	311	181	111	210	160	160	161	357	332
Departure	-7	+22	+64		-30	+19	+50	-39	-68	+134	-32	-96	-132	-69	-48	-47	-51	-3	-30
Oct. 22.	298	364	195	21	47		396	154	412	468	370	105	239	326	25	20	172	402	401
Oct. 23.	103	180		55	200		381	261	400	428	369	121	70	106	88	72	101	392	336
Oct. 24.	110	102		85	259		70	258	412	353	378	76	119	287	98	118	146	386	278
Oct. 25.	25	109		35	60		14	304	369	471	317	170	117	252	11	86	148	247	300
Oct. 26.	29	203		207	14		44	306	345	361	294	53	30	55	22	152	75	237	173
Oct. 27.	149	329	344	94	61		55	225	373	500	348	49	50	68	151	139	42	326	341
Oct. 28.	94	326	338	57	34		262	171	381	501	382	53	13	68	33	133	78	355	335
Mean	117	230		94	96	47	174	240	385	440	351	107	91	163	61	103	199	335	312
Departure	-139	+21			-134	-13	-30	-38	+62	+100	+26	-106	-72	-61	-111	-65	-62	-10	-25

ACCUMULATED DEPARTURES ON OCTOBER 28, 1943

+2989	+3374	+6097	-----	-4802	+1246	+5061	+980	-4921	-----	+1365	-5313	-----	-1631	-4676	-224	-441	-----	-189
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POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1943

[Communicated by Capt. J. F. Hellweg, U. S. N. (Ret.), Superintendent, U. S. Naval Observatory.] All measurements and spot counts were made at the Naval Observatory from plates taken at the observatories indicated. Difference in longitude is measured from the central meridian, positive toward the west. Latitude is positive toward the north. Areas are corrected for foreshortening and expressed in millionths of Sun's hemisphere. For each day, under longitude, latitude, area of spot or groups and spot count are included assumed longitude of center of the disk, assumed latitude of center of the disk, total area of spots and groups and total spot count.

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Longi- tude	Lat- tude	Dis- tance from center of disk				
1943 Oct. 1	A m 13 32	7617	-20	70	+14	30	48	3	VG	U.S. Naval.
		7617	-22	77	+19	24	24	7		
		7617	-19	80	+16	22	533	1		
			(99)	(+7)			605	11		
2	11 58	7617	-15	71	+14	17	36	5	G	Do.
		7617	-8	78	+19	14	24	8		
		7617	-5	81	+15	10	533	1		
			(86)	(+7)			593	14		
3	11 10	7617	-2	72	+14	7	24	2	F	Do.
		7617	+4	78	+17	11	36	6		
		7617	+8	82	+15	13	533	1		
			(74)	(+7)			593	9		
4	10 57	7617	+9	70	+14	12	24	4	F	Do.
		7617	+10	71	+12	12	16	1		
		7617	+21	82	+15	23	533	1		
			(61)	(+7)			573	6		
5	10 30	7617	+23	71	+12	24	24	4	G	Do.
		7617	+34	82	+15	35	582	1		
			(48)	(+7)			606	5		
6	10 52	7617	+37	71	+12	38	12	4	G	Do.
		7617	+48	82	+15	49	509	1		
			(34)	(+6)			521	5		
7	10 58	(*)	+4	25	-9	17	6	2	G	Do.
		7617	+50	71	+11	50	12	3		
		7617	+61	82	+15	61	461	1		
			(21)	(+6)			479	6		
8	11 2	7617	+74	82	+15	74	461	1	G	Do.
			(8)	(+6)			461	1		
9	11 57	7618	+22	16	-27	39	36	9	G	Do.
		7617	+86	80	+15	86	436	1		
			(354)	(+6)			472	10		
10	10 9	7618	+36	18	-27	48	36	3	G	Mt. Wilson.
			(342)	(+6)			36	3		
11	10 11	7618	+52	21	-27	61	16	2	G	Do.
			(329)	(+6)			16	2		
12	10 50			No spots					F	U. S. Naval.
13	10 15			No spots					G	Mt. Wilson.
14	10 25			No spots					F	Do.
15	10 17			No spots					G	Do.
16	12 40	7619	+2	263	+6	2	36	10	VG	U. S. Naval.
			(261)	(+6)			36	10		
17	10 20	7619	+13	262	+4	13	12	2	G	Mt. Wilson.
			(249)	(+6)			12	2		
18	11 22			No spots					G	U. S. Naval.

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1943—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Longi- tude	Lat- tude	Dis- tance from center of disk				
1943 Oct. 19	A m 10 25	7620	+3	226	-4	11	12	3	G	Mt. Wilson.
				(223)	(+6)		12	3		
20	10 30			No spots					G	U. S. Naval.
21	10 45			No spots					G	Do.
22	10 40			No spots					G	Mt. Wilson.
23	11 36			No spots					G	Do.
24	11 46	7621	-78	78	+16	78	291	1	G	Do.
				(156)	(+5)		291	1		
25	10 51	7621	-64	79	+16	64	291	1	G	Do.
				(143)	(+5)		291	1		
26	11 54	7621	-51	79	+16	52	242	1	G	Do.
				(130)	(+5)		242	1		
28	15 4	7621	-22	80	+14	23	242	1	G	U. S. Naval.
		7621	-22	80	+16	24	36	6		
		(*)	-22	80	+22	27	6	1		
				(102)	(+5)		284	8		
29	10 49	7621	-12	79	+16	17	36	6	G	Do.
		7621	-11	80	+15	16	267	1		
				(91)	(+5)		303	7		
30	10 40	7621	+2	80	+15	11	267	1	G	Do.
				(78)	(+5)		267	1		
31	13 3	7621	+16	79	+15	18	242	1	G	Do.
				(63)	(+4)		242	1		

Mean daily area for 30 days=231

* Not numbered.

VG=very good; G=good; F=fair; P=poor.

PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR
SEPTEMBER 1943

[Based on observations at Zurich, except as otherwise noted. Data furnished through the courtesy of Prof. W. Brunner, Swiss Federal Observatory, Zurich Switzerland]

September 1943	Relative numbers	September 1943	Relative numbers	September 1943	Relative numbers
1-----	0	11-----	29	21-----	12
2-----	0	12-----	22	22-----	7
3-----	0	13-----	0	23-----	0
4-----	0	14-----	0	24-----	0
5-----	0	15-----	0	25-----	0
6-----	0	16-----	0	26-----	*d 11
7-----	Mc 19	17-----	0	27-----	11
8-----	29	18-----	Mac 23	28-----	13
9-----	31	19-----	20	29-----	*16
10-----	26	20-----	13	30-----	14

Mean, 29 days=10.2

(*)=Observed at Locarno.

a= Passage of an average-size group through the central meridian.

b= Passage of a large group through the central meridian.

c= New formation of a group developing into a middle or large center of activity; E, on the eastern part of the sun's disk; W, on the western part; M, in the central-circle zone.

d= Entrance of a large or average-sized center of activity on the east limb.

Chart I. Departure (°F.) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, October 1943

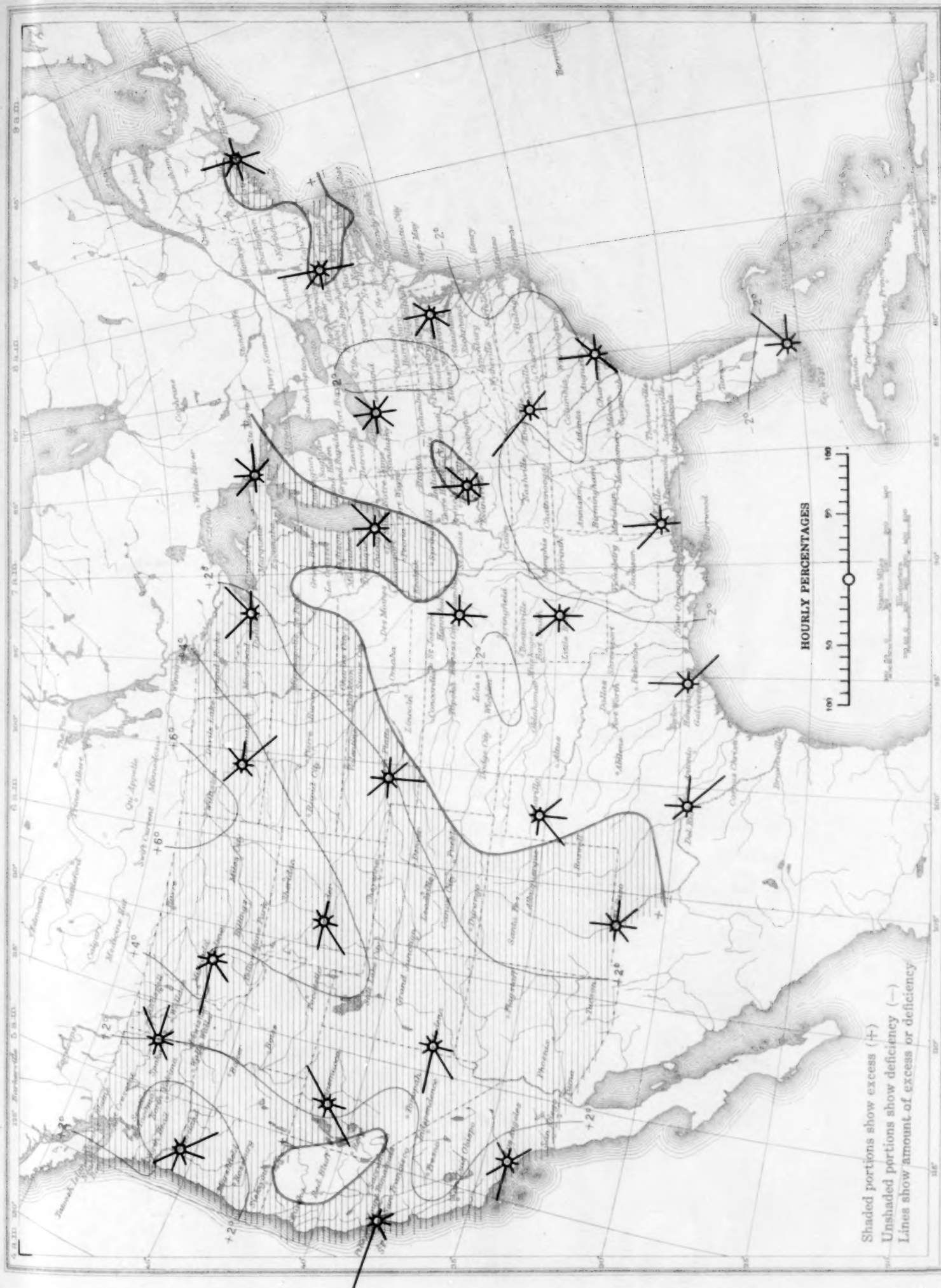
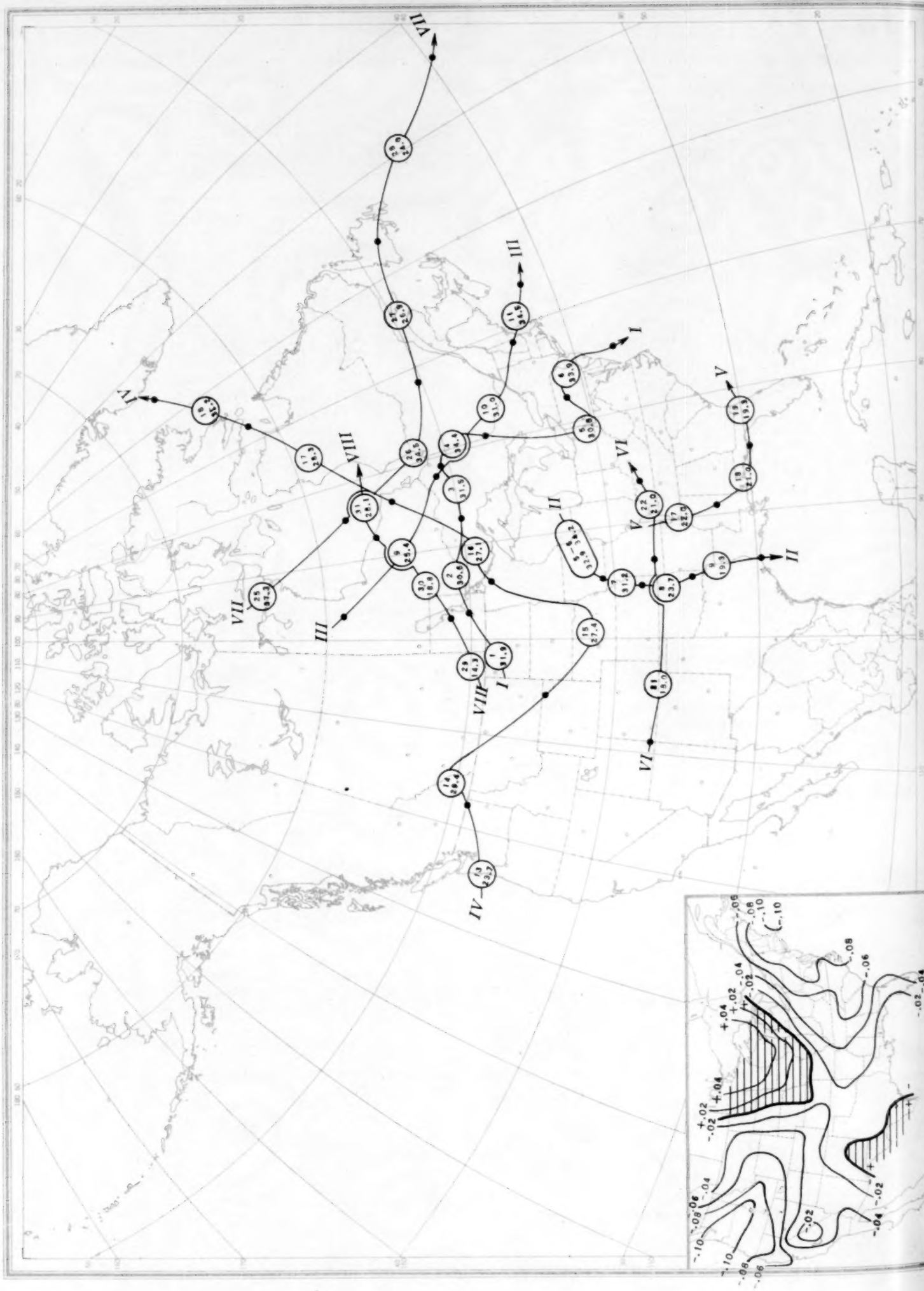


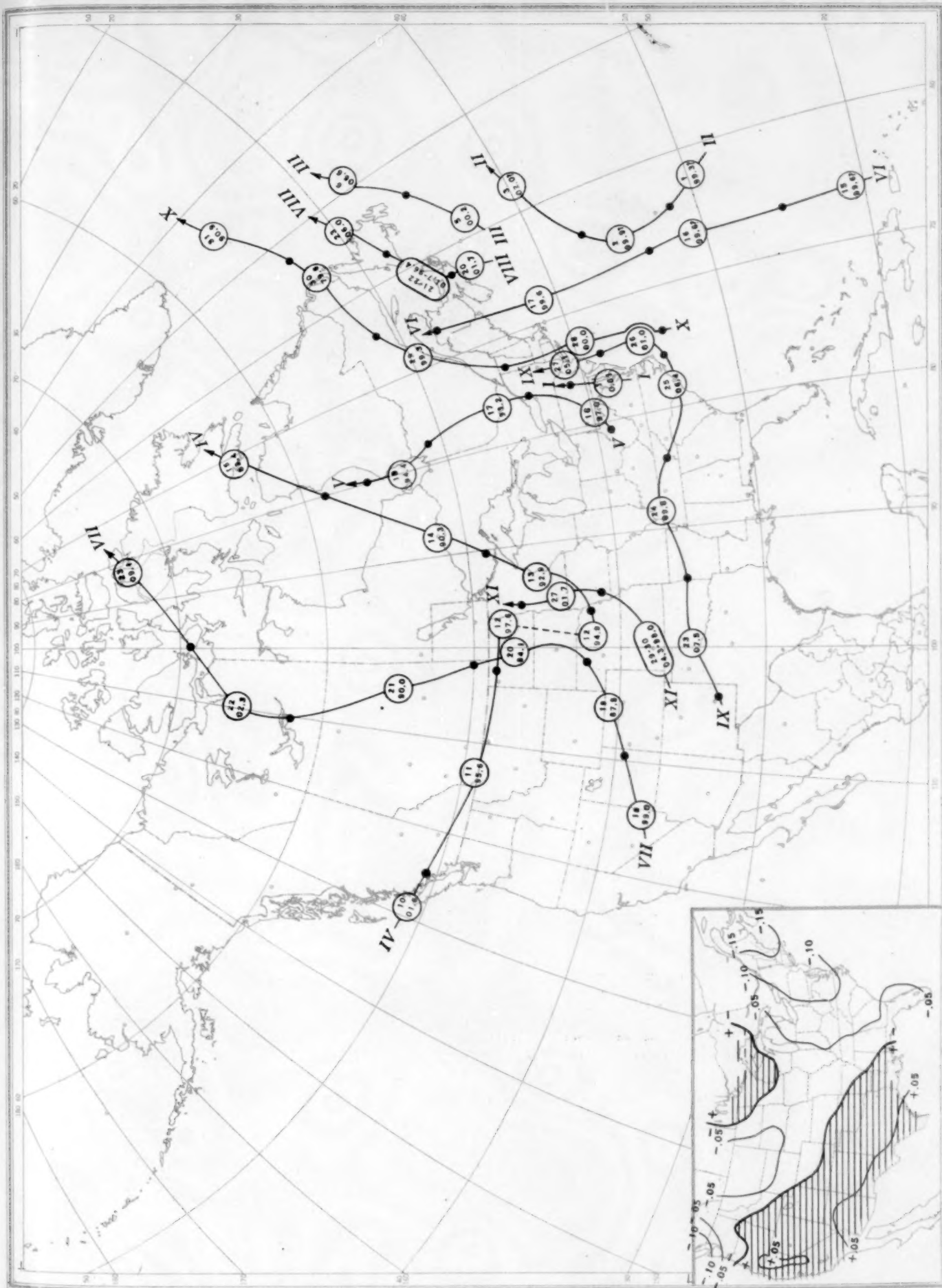
Chart II. Tracks of Centers of Anticyclones, October 1943. (Inset) Departure of Monthly Mean Pressure from Normal



Circle indicates position of anticyclone at 7:30 a. m. (76th meridian time). Dot indicates position of anticyclone at 7:30 p. m. (76th meridian time)

Chart III. Tracks of Centers of Cyclones, October 1943. (Inset) Change in Mean Pressure from Preceding Month

Chart III. Tracks of Centers of Cyclones, October 1943. (Inset) Change in Mean Pressure from Preceding Month



Circle indicates position of cyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of cyclone at 7:30 p. m. (75th meridian time).

Chart IV. Percentage of Clear Sky Between Sunrise and Sunset, October 1943

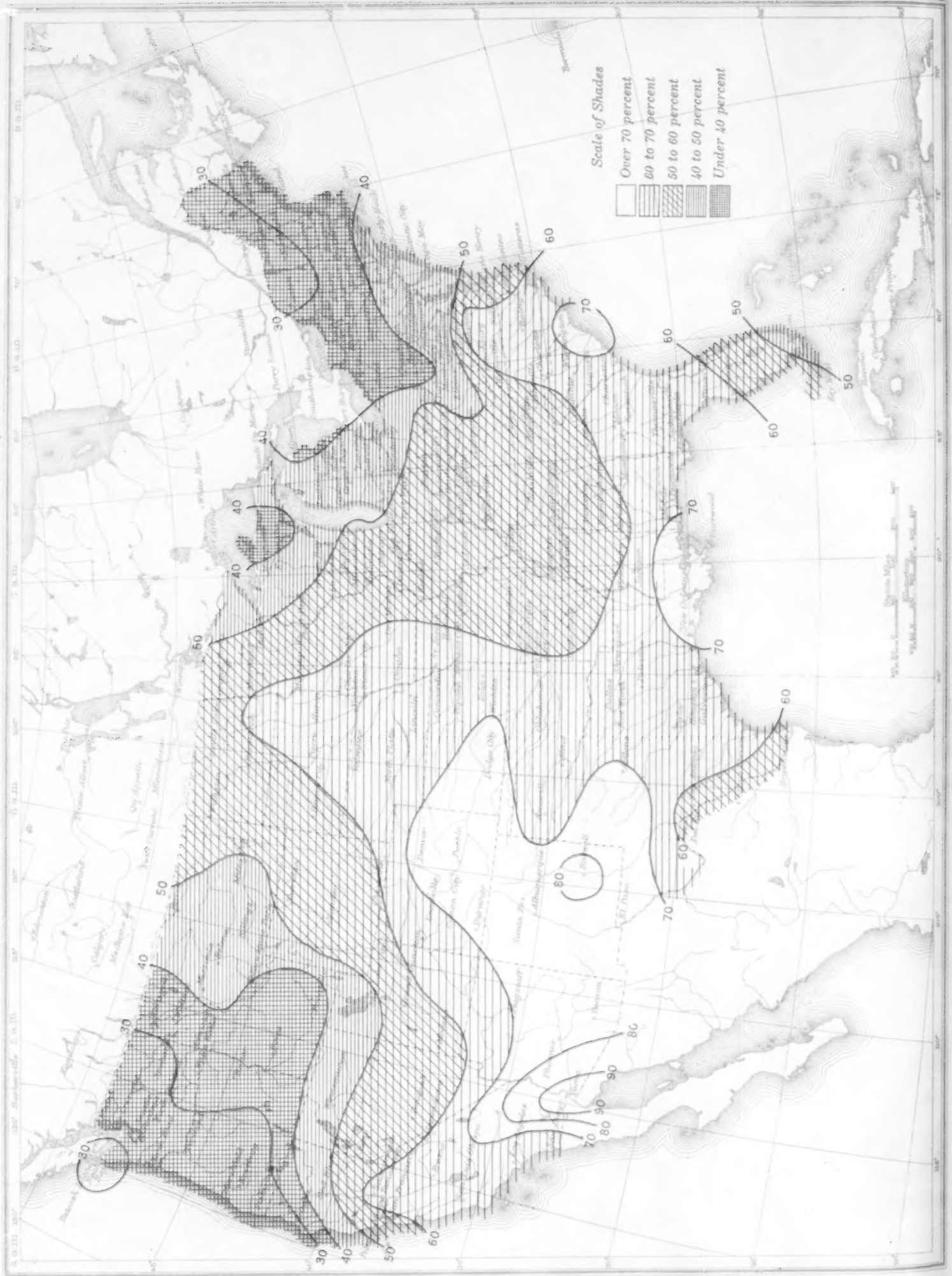


Chart V. Total Precipitation, Inches, October 1943. (Inset) Departure of Precipitation from Normal

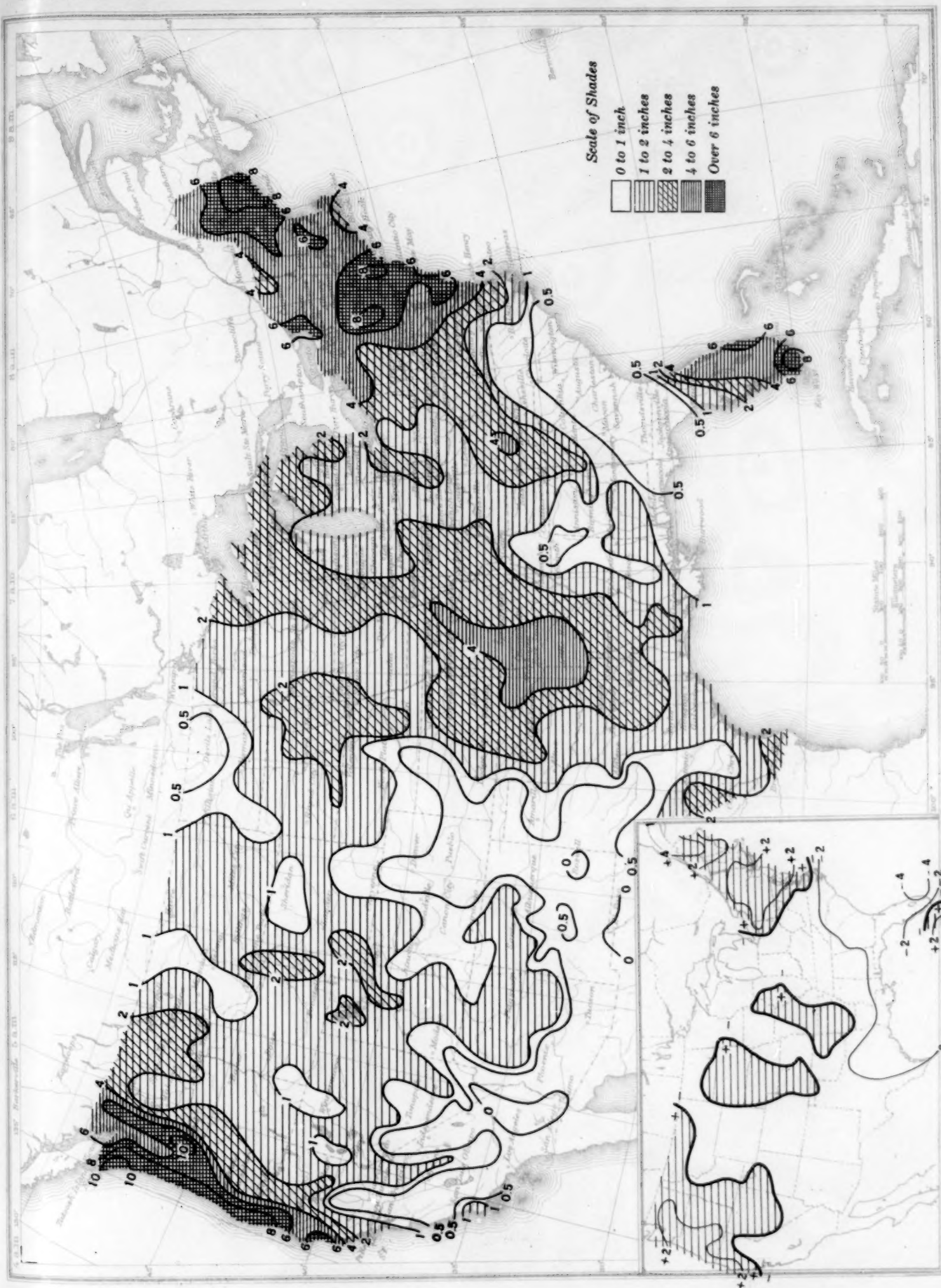


Chart VI. Isobars at Sea Level and Isotherms at Surface; Prevailing Winds, October 1943

